

# FIGURE OF MERIT STATUS REPORT

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# FIGURE OF MERIT (FOM)

This presentation is based on discussion based on developing a method for determining a FOM to assist in work prioritization.

# FIGURE OF MERIT

## UPDATED FORMULA

$$(MCC/PRI) * (SEVERITY/100) * (STATUS_{modified}) * (SF \ SCR_{modified}) * (12.5) * (2)_{if \ CASREP}$$

FOM RANGE

1 - 100

# FIGURE OF MERIT

- FOM IS A WORK IN PROGRESS & IS EVOLVING
- DEVELOPED USING SCLSIS EQUIP CRITICALITY, MRS SEVERITY DATA & 4790/2K INFO
  - ❖ MISSION CRITICALITY CODE (MCC)
  - ❖ SEVERITY TABLES (SEVERITY)
  - ❖ SWLIN (Blk 14)
  - ❖ PRIORITY (Blk 41)
  - ❖ EQUIPMENT/SYSTEM REPORTED STATUS CODE (Blk 7)
    - modified as follows
      - ✓ Status code 0 - (N/A) = 1
      - ✓ Status code 1 - (Operational) = 1
      - ✓ Status code 2 - (Inoperative) = 2
      - ✓ Status code 3 - (Reduced Capability) = 1.5
  - ❖ URGENCY FACTOR - Determined by CASREP - x2

# FIGURE OF MERIT

- ❖ CSMP Ship Board Screening Modified (TA)
  - modified as follows
    - ✓ TA 1 = 3
    - ✓ TA 2 = 2
    - ✓ TA 3 = 4
    - ✓ TA 4 = 1
- ❖ SPREAD FACTOR = 12.5
- ❖ Mission Criticality Code (MCC)
  - ✓ MCC 1 = work that could become a C1 casrep =
  - ✓ MCC 2 = work that could become a C2 casrep =
  - ✓ MCC 3 = work that could become a C3 casrep =
  - ✓ MCC 4 = work that could become a C4 casrep =

## FIGURE OF MERIT (CON'T)

- SEVERITY TABLE

Categorized failure effects into Priority & Severity

Priority

1 = Safety

2 = Mission Capability

3 = Repair Economics

4 = Other Remaining Factors

Severity Factor

100%

90% - 66%

60% - 40%

30% - 1%

See Table next slide

## Appendices

### Severity Table

PRIORITY	CATEGORY OF FAILURE EFFECT				SEVERITY FACTOR**
1	Personnel Safety				100
2	Ship Mission Capability				
<u>Effect On</u> <u>Mission Area</u>		<u>Mission Effect</u>		<u>Effect On</u> <u>Other Systems</u>	
<u>Primary</u>	<u>Secondary</u>	<u>Loss</u>	<u>Degradation</u>	<u>Yes</u> <u>No</u>	
X		X		X	90
X		X			88
X			X	X	85
X			X		82
	X	X		X	78
	X	X		X	74
	X		X	X	70
	X		X		66
3	Repair Economics				
Failure requires depot facilities for correction					60
Failure does not require being physically located in a depot but requires depot personnel or facilities for correction					55
Failure does not require depot facilities or personnel for correction but work can be done most economically during assigned availability in depot					40
4	Other Remaining Failures				30

\*\* To use this table, identify the effect of failure and locate the failure severity value that corresponds to that effect.

## Using The Severity Table

The Severity table is used for determining values for severity of failure. This table stratifies consequences of failure into four levels and assigns descending values for severity of failure accordingly:

- |    |                    |    |                  |
|----|--------------------|----|------------------|
| 1. | Safety             | 3. | Repair Economics |
| 2. | Mission Capability | 4. | Other            |

The table follows reliability-centered maintenance decision (RCM) logic which recognizes the difference in importance of the four different types of failure consequences.

First, determine whether the failure poses a direct and adverse threat to personnel safety. If "Yes," failure severity is 100. (**Table Category 1**)

If "No," consider the consequence of failure on mission capability:

- Whether a primary or secondary mission area is involved
- Whether the effect is complete loss or degradation of the mission area
- Whether other systems are/are not affected by the failure (independent or associated failure) (**Table Category 2**)

If the failure does not affect personnel safety or ship mission area, determine whether:

- The failure must be corrected by the depot
- The failure is most economically repaired within the confines of the depot
- The failure must be corrected by the depot, but depot capabilities may be brought to the ship. (**Table Category 3**)

Otherwise, the failure falls into **Table Category 4**.

## Additional Guidance in determining Severity

### 1. Redundant Systems:

Assume that all redundant equipments in a system fail simultaneously.

### 2. Distributed Systems:

Distributed systems fall into four basic categories: hull and structures, electrical distribution, damage control systems, and equipment cooling systems. To determine severity of failure, consider the following:

Hull and Structures: Repairs required to ensure watertight integrity affect the primary mission of the ship. All others affect a secondary mission.

Electrical Distribution: Treat as a primary mission.

Damage Control: Treat as a primary mission.

Equipment Cooling Systems: In general, treat as a degradation to primary mission. However, for some equipments on some ships, loss can cause loss of a primary mission.



## **Appendices**

### **3. Support and Piping Systems:**

In general, assign a severity based on the degree of degradation that a failure would cause to their parent systems.

### **4. Personnel Safety:**

Assign a severity factor of 100. A "personnel safety" failure is one which harms people directly at the time of the failure, and as a result of the failure: for example, by spraying shrapnel or noxious fumes. If the failure would only harm people if some unrelated problem takes place at the same time, it is not a "personnel safety" failure. For example, a combat system failure that permits enemy missiles to hit the ship is not considered an "unsafe" failure, because no repair job can prevent someone from shooting at the ship.

### **5. Level of Repair:**

Failures which do not require depot level repairs are not given severity codes greater than 50.